

2.2.2. Case Studies

2.2.2.1. Children

Klasner et al. (1998) published a retrospective chart review on a mass poisoning at an elementary school. The CO leak was discovered at noon, about 4 h after school started. Of the 564 people at school, 504 were children. Any child who showed evidence or complained of symptoms was sent to a hospital by ambulance or school bus. One of three hospitals received 177 children (mean age of 8.7 ± 1.8 years; age range of 4-12 years). All children were given 100% oxygen by face mask in the hospital (the authors stated that only few of them received simple face-mask oxygen en route to the hospital). The level of poisoning was assessed according to standardized poison-center data sheets (TESS, toxic exposure surveillance sheets) and was recorded as unknown (6 cases), no effect (16 cases), minor effect (124 cases), or moderate effect (30 cases). One child, for whom the data-sheet classification listed a major effect, was considered miscoded by the authors because the medical record showed that this child was sent home from the hospital without further treatment. Symptoms were present in 155 children, and a mean COHb of 7.0% (95%-C.I. 6.6-7.5%) was measured in 147 children (blood was drawn at the same time that oxygen therapy began). The authors estimated that the children were exposed at least 60 min (in some cases, 90 to 120 min) to fresh air prior to obtaining their initial COHb concentration. In the 177 children, the following symptoms (number of mentionings) were observed (some children reported more than one symptom): headache (139), nausea (69), dizziness (30), dyspnea (19), vomiting (13), abdominal pain (11), drowsiness (9), and other symptoms (0). The authors found a correlation between the total number of symptoms reported and the COHb concentration: thus, children with higher COHb concentrations were slightly more likely to report more symptoms. The authors did not mention how many of the 60 adults experienced symptoms, but stated that symptomatic adults were taken to adult hospital facilities.

Crocker and Walker (1985) analyzed 28 patients with CO poisoning that were 14 years old or younger; 25 of the 28 CO exposures were secondary to faulty venting or faulty combustion of gas furnaces, 2 of 28 were secondary to faulty combustion of a gas stove, and 1 of 28 was secondary to motor-vehicle exhaust. Twelve patients had COHb concentrations of less than 15% and were completely asymptomatic. These patients were considered to have nontoxic exposures, and they were not studied further. Of the 16 patients (mean age 7.0 ± 3.8 years, three were younger than 5 years) with a COHb of 15% or higher, 16 of 16 experienced nausea, 12 of 16 experienced associated vomiting, 13 of 14 (no information on two) complained of headache, and 11 of 16 patients were reported to be lethargic. Three of 14 patients reported visual problems, such as blurred or double vision. Nine of 16 reported at least one syncopal episode with an average COHb concentration of 31.6% and a threshold level of 24.3%. Every